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Financial Reporting Quality of Chinese Reverse Merger Firms: The Reverse Merger Effect or the Weak Country Effect? *

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Abstract

In this paper, we examine why Chinese reverse merger (RM) firms have lower financial reporting quality than U.S. IPO firms. We find that the financial reporting quality of U.S. RM firms is similar to that of matched U.S. IPO firms, but Chinese RM firms exhibit lower financial reporting quality than Chinese ADR firms. We also find that Chinese RM firms exhibit lower financial reporting quality than U.S. RM firms. These results indicate that the use of the RM process is associated with poor financial reporting quality only in firms from China, where legal enforcement and investor protection are weak. In addition, we find that compared with Chinese ADR firms, Chinese RM firms have weaker bonding incentives (as measured by CEO turnover-performance sensitivity) and poorer corporate governance. These factors in turn contribute to the lower financial reporting quality of Chinese RM firms. Overall, our results suggest that the less-scrutinized RM process allows Chinese firms with weak bonding incentives and poor governance to gain access to U.S. capital markets, resulting in poor financial reporting quality.

Keywords: Reverse mergers, Chinese firms, financial reporting quality, bonding hypothesis, cross-listings

JEL Classifications: G15, G24, G34, G38

I. INTRODUCTION

In this paper, we examine why Chinese reverse merger (RM) firms listed in the U.S. have lower financial reporting quality than U.S. IPO firms. This examination is motivated by the recent popularity of Chinese RM firms and by the accounting problems associated with these firms during the past few years. In an RM deal, a U.S. public shell firm acquires a private operating firm. Although the original U.S. public shell firm survives, the original private firm's shareholders maintain control.[1] Since the 1990s, RMs have been the most popular alternative to IPOs for firms to go public in the U.S. (e.g., Floros and Shastri 2009a). In recent years, many foreign firms, particularly those from China, have entered the U.S. equity markets via RMs. Overall, there were 448 Chinese RM deals in the 2000-2011 period.[2] About 72 percent of all foreign RM firms are from China, and over 90 percent of those listed on major U.S. stock exchanges are Chinese RM firms.

Despite its popularity, the RM process has been criticized as a "back door" or "shortcut" to going public, because RM firms bypass the scrutiny of the Securities and Exchange Commission (SEC) in the listing process. Many observers suspect that foreign RMs only "rent" the benefits of being listed in the U.S., without actually improving their corporate governance or financial reporting quality. These concerns are particularly noteworthy for Chinese RM firms, which are subject to weaker legal enforcement and investor protection. In 2010 and 2011, many Chinese RM firms restated their financial statements, and many shareholders sued Chinese RM firms for fraudulent accounting (e.g., Siegel and Wang 2013). These scandals triggered a rapid decline in the value of Chinese RM firms. From mid-2010 to mid-2011, these firms lost 80 percent of their

[1] A public shell company is defined as a public registrant that has no operations or assets, or only nominal operations and assets (SEC Securities Act Release No. 33-8587).

[2] In contrast, during the same period there were only 135 newly listed Chinese ADRs (American depositary receipt firms) on major stock exchanges and an additional 107 unsponsored (or Level 1) Chinese ADRs.

market value (Templin 2012).

In this paper, we examine whether the low financial reporting quality of Chinese RM firms is related to their use of the less-scrutinized RM method (i.e., the RM effect), the weak legal enforcement over Chinese firms (i.e., the weak country effect), or both. If the RM effect is significant, then we should expect both U.S. and Chinese RM firms to have lower financial reporting quality than their respective counterparts (i.e., U.S. IPO firms and Chinese ADR firms). If the weak country effect is significant, then we should expect Chinese RM firms to have lower financial reporting quality than U.S. RM firms. Relying on the cross-listing literature, we further hypothesize that the less-scrutinized RM process allows Chinese firms with weaker bonding incentives to access the U.S. capital markets. In that case, Chinese RM firms should show poorer corporate governance and lower financial reporting quality than Chinese ADR firms.

We investigate these questions by analyzing a sample of 287 Chinese RM firms that are traded on U.S. stock exchanges or the OTC bulletin board and have the relevant data available. Due to the inherent difficulty in capturing financial reporting quality, we follow previous research (e.g., Dechow et al. 2010; Hope et al. 2013) and use a wide range of measures, namely the likelihood of accounting restatements and four accrual-based measures. To ensure that the differences in financial reporting quality are not driven by differences in firm characteristics, we control for a comprehensive list of factors that affect financial reporting quality.

We document three major empirical results. First, we find that the financial reporting quality of U.S. RM firms is comparable with that of U.S. IPO firms matched by their trading venue, industry, year and size. However, the financial reporting quality of Chinese RM firms is lower than that of Chinese ADR firms. This result is interesting because the conditions of legal

enforcement are the same for both Chinese RM and ADR firms, and the regulatory requirement for ongoing disclosure is arguably more stringent for Chinese RM firms than for Chinese ADR firms. These results indicate that the RM effect is associated with lower financial reporting quality for Chinese firms, but not for U.S. firms.

Second, we find that the financial reporting quality of Chinese RM firms is lower than that of U.S. RM firms. Given that both types of firms adopt the same listing method (i.e., the RM process), this result indicates that among RM firms, those that are subject to weak legal enforcement have lower financial reporting quality. These results, combined with the above-described results, indicate that the less-scrutinized RM process leads to lower financial reporting quality only when the RM firms are subject to weak legal enforcement. In other words, both the RM effect and the weak country effect contribute to the lower financial reporting quality of Chinese RM firms.

Third, we examine the differences in the strength of bonding incentives and corporate governance features between Chinese RM and Chinese ADR firms. Consistent with our prediction, we find that Chinese RM firms have lower CEO turnover-performance sensitivity (a measure of bonding incentives) than Chinese ADR firms. Chinese RM firms also have higher insider ownership, lower foreign ownership, smaller boards, higher likelihood of CEO-Chairman duality, and lower CEO option-based compensation. These findings indicate that Chinese RM firms have weaker bonding incentives and engage in fewer bonding activities than Chinese ADR firms. Last but not least, we confirm that the likelihood of using RM transactions (as explained by the governance variables) is associated with the lower financial reporting quality of Chinese RM firms.

Based on these analyses, we conclude that firms self-select their listing choices (RM vs.

IPO), and the less-scrutinized RM process allows foreign firms with weak bonding incentives and poor financial reporting quality to enter the U.S. markets. In contrast, foreign firms with stronger bonding incentives and better financial reporting quality tend to enter the U.S. capital markets via the IPO process. In other words, the self-selection of listing options reveals firm types and differential levels of financial reporting quality. This self-selection argument implies that the financial reporting quality of Chinese RM firms is lower than that of Chinese ADR firms. Note that we are not suggesting that the RM process *causes* lower financial reporting quality.

The above-stated analyses focus on the level of financial reporting quality, not on investors' perceptions of it. When we use the earnings response coefficient based on quarterly earnings announcements to capture investors' perceptions of financial reporting quality, we find that Chinese RM firms do not differ from other firms. However, we find that throughout the year the market reacts less positively to the changes in earnings reported by Chinese RM firms.

This paper contributes to the literature in several important ways. First, it sheds light on why Chinese RM firms have lower financial reporting quality than U.S. IPO firms, and thus answers the call for more research on the financial reporting quality of RM firms (PCAOB 2011). Our findings should be of interest to regulators engaged in designing rules to enhance the financial reporting quality of foreign RM firms and to those investors who trade on the shares of these firms.

Second, our paper contributes to the literature on the financial reporting quality of U.S.-listed foreign firms by investigating the effect of the most popular listing method in recent years, the RM, which has generally been excluded in prior research (Lang et al. 2003; Lang et al. 2006; Leuz 2006; Ndubizu 2007). In particular, the paper builds on and extends the Lang et al. (2006)

study in several important dimensions. First and foremost, although Lang et al. compare the financial reporting quality of ADRs and U.S. domestic firms, we investigate *why* Chinese RM firms have lower financial reporting quality than U.S. IPO firms. Second, although one can infer from the conclusion of Lang et al. that weak legal enforcement and weak investor protection in China lead Chinese firms to have lower financial reporting quality than U.S. firms (i.e., the weak country effect), their analysis does not shed light on the RM effect. Our analyses enhance our understanding of how the RM process affects U.S. firms and Chinese firms in different ways. Furthermore, we document that Chinese RM firms have weaker bonding incentives and poorer corporate governance than Chinese ADR firms, and that these differences contribute to the lower financial reporting quality of Chinese RM firms.

Third, this paper contributes to the cross-listing literature (Licht 2003; Siegel 2005; Lang et al. 2006). Our analysis of Chinese RM and ADR firms is particularly interesting because it highlights the importance of listing choices. Our results suggest that when alternative listing choices are available, some firms choose the more stringent IPO listing method, adopt better corporate governance mechanisms, and improve their financial reporting quality. Other firms choose the less stringent RM listing method to bypass the scrutiny of regulators and the market.

This paper is related to several concurrent studies that examine various issues surrounding Chinese RM firms, but our paper differs from these studies in several significant ways. By focusing on the fundamentals, Lee et al. (2015) find that Chinese RM firms are more likely to survive and perform better than other RM firms or exchange-industry-size matched U.S. firms. Like Lee et al., we also find that Chinese RM firms have better accounting performance (ROE) than U.S. RM firms or matched U.S. IPO firms. However, our paper complements that of Lee et al. by addressing related but differ research questions. While Lee et al. (2015) focus on the

performance of Chinese RM firms, we focus on the financial reporting quality of these firms.[3] Better performance does not necessarily imply better financial reporting quality (Ang et al. 2014; Darrough et al. 2015).

Our paper is closely related to a concurrent study, namely that of Givoly et al. (2014), which also finds that Chinese RM firms have lower financial reporting quality than matched U.S. IPO firms. These authors attribute their finding to the broad cultural and institutional differences between the U.S. and China, without providing any direct evidence. Unlike Givoly et al., we conduct a more comprehensive analysis. In addition, we compare Chinese RM and Chinese ADR firms in terms of bonding incentives and corporate governance. Overall, our findings suggest that the lack of scrutiny associated with the RM process enables the firms with weak bonding incentives from China to list in the U.S., and that such practice contributes to low financial reporting quality.

Siegel and Wang (2013) also examine the governance and reporting quality of RM firms. They find that early adopters of RMs and RM firms hiring a Big Four auditor exhibit superior corporate governance outcomes, including a lower likelihood of restatements. However, their study differs from our paper in three important dimensions. First, Siegel and Wang focus on the variations within non-U.S. RM firms, and they do not investigate the difference between these RM firms and other types of firms (e.g., U.S. IPO firms, Chinese ADR firms, or U.S. RM firms). Second, Siegel and Wang include both RMs involving shells and RMs involving two operating companies. For example, more than half of the RM firms in their sample are Canadian RM firms, the majority of which are not RM firms involving shell companies. In contrast, our paper and

[3] There are also several other studies on Chinese RM firms, but these studies do not examine financial reporting quality issues. For example, Darrough et al. (2015) examine the spillover effects of Chinese firms that have been implicated in fraud. They find that Chinese firms that were not implicated in fraud also experienced a significant drop in stock prices in late 2010 and early 2011. He et al. (2013) and Ang et al. (2014) arrive at a similar conclusion, and they show that many Chinese firms were delisted after the 2010-2011 drop in stock prices.

other concurrent studies focus on RMs involving shells. Lastly, unlike Siegel and Wang, we examine how firm-level governance affects firms' listing choices, and how these choices relate to financial reporting quality. As such, Siegel and Wang (2013) and the above-mentioned studies including ours, complement each other.

The rest of this paper is organized as follows. Section 2 discusses the background of Chinese RM firms, reviews the related research, and develops the hypotheses. Section 3 explains the sample selection, variable measurements, and descriptive statistics. Section 4 presents the empirical results with regard to the financial reporting quality of Chinese RM firms. Section 5 reports our analysis concerning the strength of the bonding incentive among U.S.-listed Chinese firms, and how this incentive relates to financial reporting quality. Section 6 examines the market perception of financial reporting quality. Section 7 concludes.

II. BACKGROUND, RELATED RESEARCH, AND HYPOTHESIS DEVELOPMENT

Background on Chinese RM Firms

Foreign firms, including Chinese firms, have various incentives for seeking access to U.S. capital markets. The most frequently cited reasons are to obtain cheaper capital and increase liquidity (e.g., Pagano et al. 2002; Licht 2003). Other benefits include an increased shareholder base, greater visibility, growth, diversification and economies of scale. As noted by the SEC's *Investor Bulletin on Reverse Mergers* (2011), obtaining access to the U.S. capital markets also improves a company's reputation with its customers and potential acquirers. Finally, in China, having a company listed on a U.S. stock exchange is sometimes regarded as a trophy that increases the CEO's social status (Gillis 2011). In a similar vein, Hung et al. (2012) find that state-owned enterprises with strong political connections are more likely to list on overseas

exchanges because it can increase the managers' private benefits such as receiving media coverage and being promoted to senior government positions. All of these potential benefits prompt Chinese firms to list in the U.S.

In recent years, the RM has become the most popular method for foreign firms, including Chinese firms, to go public in the U.S. In a typical Chinese RM transaction, a U.S. public shell company acquires a Chinese private firm through a share exchange. The U.S. public firm survives, but its directors and managers are replaced by the executives of the Chinese private firm. One of the reasons for the recent popularity of RMs is that compared with other approaches (e.g., IPOs), the RM process is faster and cheaper. Adjei et al. (2008) estimate that the cost of setting up a public shell company and completing the RM transaction can be as low as $50,000, compared to the millions of dollars it can cost to complete an IPO. Also, a typical RM can be done within 6 months. In contrast, an IPO commonly takes 9 to 12 months to complete, and the process can be cancelled if the market situation changes unfavorably. Therefore, smaller, younger, and less profitable firms are more likely to undertake RM transactions (Adjei et al. 2008; Jindra et al. 2012). Thus, despite the disadvantages of RMs such as less access to funding, less support from market intermediaries and being traded on the OTC market (Feldman 2009), the number of RM firms has grown rapidly in the past decade.

Interestingly, the RM approach to accessing the U.S. capital markets is particularly popular among Chinese firms as compared to other foreign firms. There are two possible reasons for this phenomenon. First, Chinese private firms have difficulties raising capital in China. According to the OECD Economic Survey (2010), most Chinese private firms have difficulty accessing bank credit, because Chinese banks focus mainly on the financing needs of large state-owned enterprises and on policy-directed lending. The still-developing bond markets are dominated by

bonds issued by the central government and the central bank. In 2013, corporate bonds accounted for only 2.4 percent of the bond market. Even though the domestic stock markets have grown rapidly, private firms still have difficulties being listed on the Shanghai or Shenzhen stock exchanges due to the high standards required for listing.[4] These requirements prevent many small- or medium-sized Chinese firms from raising capital from the public in China.

Second, Feldman (2009) argues that U.S. investors have shown a strong desire to tap into China's fast-growing economy in recent years. To fulfill the strong demand from the market, some Wall Street bankers provide services that include accounting, legal advice, auditing, and public relations to encourage and prepare Chinese firms to enter the U.S. and raise capital there. Both the desire of U.S. investors to gain from China's economic growth and the institutional support provided attract Chinese firms to adopt the RM approach for entering the U.S. capital markets.

Since 2010, however, Chinese RM firms, especially those listed on the major stock exchanges, have drawn significant attention due to their large number of accounting fraud cases. In early 2011, the SEC suspended trading of several Chinese RM firms' shares and revoked the securities registrations of several others, primarily due to financial reporting concerns. Similarly, high-profile short-sellers have also targeted some Chinese RM firms. For example, in January 2011 J Capital Research issued a research report on China Green Agriculture, Muddy Waters on Sino-Forest in June 2011, and Citron Research on several Chinese RM firms in 2011. In response to these issues, the SEC issued a bulletin in July 2011 to warn investors concerning the dangers of investing in RM firms. In the same year, the Public Company Accounting Oversight Board (PCAOB) issued a research note highlighting problems with Chinese RM firms,

[4] For example, to be qualified for listing on the main board or the small firm board, a firm must have been in business for more than three years and have made profits over the last three consecutive years, with cumulative profits of more than 30 million yuan.

particularly the growing concerns over these firms' audit quality.

Many commentators and regulators attribute these issues to the speed of the RM process and the loopholes in its requirements.[5] Unlike the IPO process, which provides ample opportunities for information dissemination such as road shows and detailed prospectuses, less time is provided for investors and the SEC to evaluate a firm during the RM process.[6] Although IPO firms must file financial reports with the SEC for approval before going public, firms conducting RMs are only required to file their consolidated financial reports (Super 8Ks) *after* the transaction. In addition, a Super 8K is not as detailed as a prospectus. A Super 8K usually provides information for the past two years, but a prospectus typically provides information for the past five years. In addition, many Super 8Ks lack complete and detailed financial statements.

The protection that investors have against false financial statements is also much weaker in the RM than in the IPO process. As IPO cases involve the issuance of new shares, investment banks are also responsible for the representational faithfulness of the financial statements. In contrast, no underwriters are involved in RM cases, and most of the law firms or auditors involved in RM deals are small. The scrutiny from financial analysts and institutional investors is also lacking, because most RM firms are traded on the OTC market.

It is important to distinguish, however, between the regulatory requirements for the listing process and the requirements for ongoing reporting. Although the RM process is characterized

[5] For example, in April 2011, Luis Aguilar, one of the SEC's commissioners, commented that "There are a lot of different ways for companies to access the public markets, but not all of them are equal. They differ in the quality of the disclosures, the time investors and the SEC typically have to consider them, and the protections that investors have against false and fraudulent statements ... In the world of backdoor registrations to gain entry into the U.S. public market, the use by Chinese companies has raised some unique issues ... There appear to be systematic concerns with the quality of the auditing and financial reporting." (excerpt from the speech "Facilitating Real Capital Formation" by Luis A. Aguilar, given at the SEC Council of Institutional Investors Spring Meeting in Washington, D.C. on April 4, 2011. Accessible at http://www.sec.gov/news/speech/2011/spch040411laa.htm.)

[6] An RM transaction can progress so fast that it is possible for an RM firm to be listed on a major stock exchange before the required financial statement is filed with the SEC. For example, the Chinese firm SinoCoking, merged into a shell company named Alleauctions.com on February 5, 2010. Three days later the Form 8-K was filed, and the company was quoted on the OTC market. Thirteen days later the stock was uplisted to the NASDAQ. However, it was not until March 18 that SinoCoking amended its 8-K filings to include the required audited financial statements.

by weak scrutiny, RM firms are subject to the same regulatory requirements for ongoing financial reporting as firms that go public via IPOs (Licht 2013). For example, on CNBC's *Fast Money*, the CEO of the NASDAQ OMX Group, Bob Greifeld, emphasized that the regulatory requirements and auditing standards for Chinese RM firms are identical to those for other listed firms. Please refer to Templin (2012) for more detailed discussions on the regulatory and legal issues related to Chinese RM firms.

Related Research

This paper is broadly related to the cross-listing literature, and particularly to those studies that examine the effects of cross-listing on financial reporting quality. There is a long line of research that examines the effects of cross-listing on foreign firms' corporate decisions and on firm value (e.g., Coffee 2002; Licht 2003; Doidge et al. 2004; Siegel 2005; Leuz 2006; Doidge et al. 2009). The majority of these studies are built on the bonding hypothesis (e.g., Coffee 1999; Stulz 1999), which states that firms with poor minority shareholder protection signal their desire to respect shareholder rights by listing in a jurisdiction with higher market scrutiny, tougher regulations, and better enforcement.

In terms of the relationship between cross-listing and financial reporting quality, Lang et al. (2003) find that firms cross-listed in the U.S. reflect bad news in a more timely manner, have a higher correlation between earnings and share prices, and are less likely to engage in earnings management than firms listed only in their home countries. Bailey et al. (2006) also document that cross-listed firms have higher earnings response coefficients (ERCs) than firms that are not cross-listed.

In addition to comparing cross-listed firms with firms listed in their own countries, previous studies have examined the financial reporting quality of cross-listed firms relative to

U.S. domestic firms. For example, Lang et al. (2006) find that cross-listed firms are more likely to engage in earnings management than U.S. domestic firms. Ndubizu (2007) finds similar evidence, particularly for periods surrounding the time of cross-listing.

Hypothesis Development on the Financial Reporting Quality of Chinese RM Firms

In this section, we develop the hypotheses on why Chinese RM firms have lower financial reporting quality than U.S. IPO firms. Our argument is largely built on the cross-listing literature as discussed above. Prior research suggests three primary factors that can affect the financial reporting quality of foreign firms listed in the U.S.:

1. Enhanced disclosure requirements and market scrutiny in the U.S. These accountability structures are the foundations of the bonding mechanism that can improve the financial reporting quality of cross-listed foreign firms compared to their counterparts in their home countries (e.g., Lang et al. 2003; Leuz 2006; Gong et al. 2013). However, as we are not comparing Chinese firms listed in the U.S. with those listed in China, this factor is not particularly relevant for most of our analyses.
2. Investor protection in the home country and SEC enforcement over U.S.-listed foreign firms. For foreign firms from countries with weak investor protection, being listed in the U.S. can improve their financial reporting quality. However, the combination of weak investor protection in their home countries and weak SEC enforcement over foreign firms can reduce these firms' bonding incentives and lead to lower financial reporting quality compared to their U.S. counterparts (e.g., Lang et al. 2003; Siegel 2005; Leuz 2006; Gong et al. 2013).
3. Listing choices, firm level bonding incentives and governance. How a foreign firm accesses the U.S. capital markets can affect its financial reporting quality due to differences in the levels of scrutiny during the listing process. What is particularly relevant for this paper is

whether the use of the RM method is associated with lower financial reporting quality. Although some firms choose the RM process because it is cheaper and faster, others might choose it because the scrutiny is less stringent. Therefore, firms with weaker bonding incentives and poorer governance may choose the RM process over the IPO process. Many studies argue that a firm's incentives and governance have more significant effects on its financial reporting quality than the accounting rules in general (e.g., Ball et al. 2003; Chi et al. 2013), and that this is especially the case for foreign firms listed in the U.S. (Leuz 2006). Below, we elaborate on the effects of these factors whenever they are applicable.

The RM Effect

As discussed above, the potential loopholes associated with the RM process, particularly the lack of market and regulatory scrutiny, have drawn attention from both the investment community and regulators. The weak scrutiny by regulators and market participants, along with other problems with the RM process, can result in lower financial reporting quality for RM firms than for their counterparts. We are not suggesting that the RM process causes firms to reduce their financial reporting quality. Instead, we argue that firms choosing the IPO process tend to improve their financial reporting quality due to the more stringent listing standards, the more closely scrutinized process, and the concerns of auditors and underwriters over potential litigation. In contrast, the firms that select the RM process might not improve their financial reporting quality, as the registration process is less scrutinized. In addition, the less-scrutinized RM process can attract firms with weak bonding incentives, again resulting in lower financial reporting quality for RM firms.

To isolate the RM effect for U.S. firms, we compare U.S. RM firms with U.S. IPO firms. As these two groups of firms differ only in their listing process, we expect that if the use of the

less-scrutinized RM process is the main driver for poor financial reporting quality, then U.S. RM firms should have lower financial reporting quality than U.S. IPO firms:

H1: Ceteris paribus, the financial reporting quality of U.S. RM firms is lower than that of U.S. IPO firms.

Similarly, both Chinese RM firms and Chinese ADR firms are subject to the same legal enforcement regimes (e.g., investor protection in China and the SEC's enforcement in the U.S.), and they differ only in their listing choices. Thus, if the use of the less-scrutinized RM process is the main driver, then we hypothesize the following:

H2: Ceteris paribus, the financial reporting quality of Chinese RM firms is lower than that of Chinese ADR firms.

We note, however, that although the RM process is less scrutinized than the IPO-ADR process, Chinese RM firms are subject to more stringent regulatory requirements in terms of ongoing financial reporting and governance than Chinese ADR firms. ADRs are exempt from some requirements related to disclosure and corporate governance, such as the proxy and insider trading provisions of the Securities and Exchange Act of 1934, quarterly reporting requirements and Regulation Fair Disclosure (e.g., Licht 2003; Leuz 2006). In addition, ADR firms do not need to prepare the full U.S. GAAP financial statements; they only need to prepare 20-Fs. In contrast, Chinese RM firms inherit the filing status of the U.S. shell firms, and they must file financial statements as frequently and provide disclosures that are as detailed as those required of U.S. IPO firms. These differences in regulatory requirements are likely to cause bias *against* finding evidence consistent with H2.

The Weak Country Effect

The weak country effect refers to the notion that U.S. regulators have difficulties in gathering evidence and U.S. investors have problems in protecting their legal rights in countries

with weak investor protection (e.g., Cheng et al. 2014; McMahon 2012). These problems are exacerbated by the lack of jurisdiction of the U.S. enforcement officials, and by the lack of intention and/or resources that local regulators have in monitoring and disciplining U.S.-listed firms (Jindra et al. 2012; Siegel and Wang 2013).[7] These problems certainly apply to Chinese RM firms. Many Chinese RM firms openly admit that both investor protection and legal enforcement are weak.[8, 9] Templin (2012) notes that regulators have weak enforcement powers over not only Chinese RM firms, but also over their Chinese auditors. Templin argues that the Chinese auditors who usually carry out audit work for the U.S. auditors hired by Chinese RM firms are commonly short of skills, and sometimes have lower ethical standards. All of these problems can lead to poor financial reporting quality.

To study the weak country effect, i.e., the effect of weak legal enforcement on the financial reporting quality of Chinese firms, one needs to control for the listing choice. For this purpose, we compare the reporting quality of Chinese RM and U.S. RM firms. Both groups of firms go through the same listing process and are subject to the same financial reporting rules. If weak legal enforcement over Chinese RM firms leads to lower financial reporting quality, then we

[7] For example, Jindra et al. (2012) argue that although "the incidence of litigation appears higher for CRM [Chinese RM] firms, the cost of litigation as measured by dollar settlement amounts does not appear large, especially when compared to other settlements (page 24)."

[8] For example, with respect to the weak U.S. enforcement, China Display states on page 19 of its prospectus that "It will be extremely difficult to acquire jurisdiction and enforce liabilities against our officers, directors and assets based in China. Substantially all of our assets will be located outside of the United States and our officers and directors will reside outside of the United States. As a result, it may not be possible for United States investors to enforce their legal rights, to effect service of process upon our directors or officers or to enforce judgments of United States courts predicated upon civil liabilities and criminal penalties of our directors and officers under Federal securities laws. Moreover, we have been advised that China does not have treaties providing for the reciprocal recognition and enforcement of judgments of courts with the United States. Further, it is unclear if extradition treaties now in effect between the United States and China would permit effective enforcement of criminal penalties of the Federal securities laws."

[9] For example, with respect to weak investor protection in China, China Crescent stated in its 10K that "as the Chinese legal system evolves rapidly, the interpretations of many laws, regulations, and rules are not always uniform, and enforcement of these laws, regulations and rules involve uncertainties which may limit legal protections available to you and us."

expect Chinese RM firms to have lower financial reporting quality than U.S. RM firms:[10]

H3: Ceteris paribus, the financial reporting quality of Chinese RM firms is lower than that of U.S. RM firms.

Chinese RM Firms and Chinese ADR Firms: Bonding Incentives and Corporate Governance

When a Chinese firm intends to access the U.S. capital markets, it can (to some extent) choose to use either the RM approach or another approach (e.g., ADR).[11] In light of this potential self-selection issue, we examine the strength of the bonding incentives and corporate governance of Chinese RM and Chinese ADR firms to better understand why financial reporting quality differs between these two groups of firms.[12]

Ball et al. (2003) find that when the incentive for increasing financial reporting quality is low, stringent standards do not necessarily lead to high-quality financial reporting. Subsequent studies, such as Chi et al. (2013), also find that incentives rather than rules tend to determine financial reporting quality. As such, although Chinese RM and ADR firms are subject to the same legal enforcement and investor protection, their financial reporting quality depends on their bonding incentives.

The notion of the bonding mechanism originates from the idea that in the more developed capital markets, foreign firms voluntarily subject themselves to stringent regulations and accept

[10] This weak legal enforcement and investor protection applies not only to Chinese RM firms, but also to Chinese ADR firms. In the empirical analysis section, we discuss in detail whether this factor alone explains the low financial reporting quality of Chinese RM firms.

[11] All private firms can theoretically choose the RM approach because they do not need to obtain approval from security regulators in China. As for ADRs, based on our untabulated analyses, we find that only 15 firms in our sample (11 percent) are incorporated in China and obtain approval from Chinese security regulators to access the U.S. markets via ADRs (e.g., China Eastern Airlines, China Telecom). The rest of the ADR firms (89 percent) are incorporated in offshore centers such as the Cayman Islands and the Virgin Islands, and they do not need to obtain Chinese regulators' approval to issue shares overseas (e.g., Sina, Baidu, Youku). As such, a Chinese private firm can theoretically choose to be incorporated in offshore centers and access the U.S. capital markets via ADRs.

[12] This type of self-selection differs from the other type of self-selection that needs to be controlled for. As discussed above, the RM process is a cheaper and faster process than the IPO process, and thus smaller or poorly performing firms are more likely to use the RM process. These firm characteristics are also correlated with financial reporting quality. As such, we control for the confounding effect of these firm characteristics in the empirical analyses, as discussed below.

close monitoring from market participants in exchange for cheaper capital. However, the effectiveness of legal bonding is affected by the strength of legal enforcement and the firms' bonding incentives. Legal enforcement actions against foreign firms are rare, and they often result in insignificant penalties (e.g., Siegel 2005; Licht et al. 2013). Such weak enforcement over foreign firms reduces the firms' incentives to improve corporate governance or to provide high-quality financial statements. To distinguish themselves from others, high quality firms are likely to engage in a dynamic reputation-building process through which their mangers gradually form a reputation for not expropriating minority shareholders. These firms build a sound reputation by, for example, voluntarily improving corporate governance or by hiring reputable auditors and investment bankers (Coffee 2002; Siegel 2005; Marosi and Massoud 2008; Carcello et al. 2014).

We argue that the Chinese firms that have stronger bonding incentives and better financial reporting quality tend to enter the U.S. capital markets via the IPO process, because of the close scrutiny of the SEC and market participants, and the involvement of reputable market intermediaries such as auditors and underwriters. These IPO/ADR firms are likely to have strong bonding incentives because, as examined in Coffee (2002), the insiders of ADR firms enjoy an increased valuation premium, and the existing shareholders can immediately benefit from the bonding. In contrast, the less-scrutinized RM process allows Chinese firms with weaker bonding incentives and poorer financial reporting quality to enter the U.S. markets. Chinese RM firms have weak bonding incentives, likely because most of the insiders from the original private firms do not sell their shares after the RM transactions (Floros and Shastri 2009b). As such, they do not benefit from strong bonding.

Stulz (1999) argues that in a weak legal enforcement environment, adopting more effective

corporate governance mechanisms can serve as a strong signal of a firm's bonding incentives. Therefore we argue that the corporate governance-related decisions made by U.S.-listed Chinese firms are tied to the strength of their bonding incentives. This argument implies that Chinese RM firms have weaker corporate governance than Chinese ADR firms.

In summary, this discussion implies that bonding incentives and corporate governance are weaker for Chinese RM firms than for Chinese ADR firms. Our last set of hypotheses is thus as follows:

H4a: Ceteris paribus, Chinese RM firms have weaker bonding incentives than Chinese ADR firms.

H4b: Ceteris paribus, the strength of corporate governance is weaker in Chinese RM firms than in Chinese ADR firms.

III. SAMPLE AND DATA

Sample Selection

We rely on multiple sources to compile our sample of Chinese RM firms. We start with the list of Chinese RM firms from Dealflow Media, which tracks RM deals with U.S. shell companies starting from 2001. From the records of Dealflow Media, we identify 432 RM deals involving Chinese private companies in the 2001-2011 period. We then cross-check this list with Chinese RM firms listed on the NYSE, the NYSE Amex, and the NASDAQ based on a Bloomberg report published in June 2011, and a record of U.S.-listed Chinese firms included in the Halter USX China Index and in reports by CYNES.com.[13] To ensure that these firms are listed through the RM method, we go through these firms' annual filings and their websites. These steps yield 16 additional Chinese RM firms, resulting in our initial sample of 448 Chinese

[13] The Halter USX China Index includes Chinese firms that are listed on the NYSE, NYSE-AMEX, or the NASDAQ, and have a market-cap greater than $50 million. The components of the Halter Index are updated quarterly based on the basic market value requirement and other factors. To avoid a survivorship bias, we collect a historical list of Chinese issues from quarterly reports of the Halter USX China Index since 2003.

RM firms in the 2000-2011 period.

To be included in our final sample, Chinese RM firms need to satisfy the following criteria: (1) the headquarters of the firm and the majority of its operations are in China; (2) SEC filings (i.e., the first 10K and 8K filings) are available to verify whether a U.S. shell company is involved;[14] (3) the firms are not in the financial (SIC 6000-6999) or utilities (SIC4900-4949) industries; (4) accounting data are available from Compustat or 10K filings. As a result, 6, 4, 45 and 106 firms are excluded due to the above four requirements, respectively. Our final sample, therefore, includes 287 Chinese RM firms. Of these firms, 116 eventually listed on the major exchanges, and 171 were still traded on the OTC market at the time of data collection.[15]

Note that to increase the generalizability of the results, we include both firms traded on the major stock exchanges and on the OTC market. The drawback to including OTC firms is that these firms are on average much smaller than those traded on the major stock exchanges. Firms traded on the OTC market are also subject to less stringent market monitoring. These differences are likely to introduce noise to the analyses. To mitigate this effect, we match the control firms by their trading venue, as is discussed in detail later. We also conduct an untabulated sensitivity test by excluding OTC firms from the sample, and find quantitatively similar results.

The sample selection process for U.S. RM firms is similar. From Dealflow Media, we identify 1,204 RM deals involving U.S. shell companies. Applying the same criteria as

[14] We limit our sample to RM firms with shell firms for two reasons. First, an RM transaction between two operating firms is similar to a regular merger and acquisition, except that it is the target (not the acquirer) that survives. A lot of reputable firms have been established through this method, including Blockbuster, the NYSE, Texas Instruments, and Berkshire Hathaway. However, the primary objective of RMs involving shell firms is for the private firms to go public. Second, the majority of the U.S. RM deals in our sample period are conducted through merging with shell firms. Therefore, focusing on RMs with shell firms can facilitate a more appropriate comparison.

[15] Compustat covers firms traded on the OTC market only if their shares are priced at $0.01 or above, and are traded fairly consistently. For OTC-traded Chinese RM firms not covered by Compustat, we hand-collect data from their 10K filings. To ensure that our results are not affected by extremely small firms, we limit the scope of data collection to firms with positive common shareholders' equity, non-zero sales, and with total assets of one million dollars or more.

previously described, we obtain 273 U.S. RM firms. Of these, 65 have uplisted to major stock exchanges and 208 are still traded on the OTC market.

We collect Chinese ADRs based on information available from the Bank of New York, JPMorgan's adr.com, CYNE.com, Sina.com's historical quarterly reports and the Halter USX China Index. We read the 20-F filings of Chinese ADR firms to identify the locations of their headquarters and businesses and to ensure that these firms are from China. We do not include ADRs traded on the OTC market, because they are exempt from the SEC reporting requirements.[16] These steps result in a sample of 142 Chinese ADRs.

In addition to accounting data from Compustat, we obtain the price and return data from the Center for Research in Security Prices (CRSP) and the restatement data from Audit Analytics. We hand-collect CEO turnover and corporate governance variables for Chinese RM and ADR firms from their 10Ks, 20Fs, and proxy statements filed with the SEC.

Panel A of Table 1 reports the yearly distribution of Chinese RM firms, U.S. RM firms, and Chinese ADRs.[17] The greatest number of Chinese RM deals happened in the 2004-2010 period. Panel B of Table 1 presents the distribution based on the trading venue at the time of data collection. Chinese RM firms are more likely to be traded on the major exchanges than U.S. RM firms. Also, a disproportionally higher percentage of Chinese ADR firms (67 out of 142) are listed on the NYSE; the results are quantitatively similar when we control for exchange fixed effects in all regressions. Panel C of Table 1 presents the sample distribution by Fama-French

[16] ADRs (sponsored or unsponsored) that trade on the OTC market are exempt from Section 12g3-2(b) of the Security Exchange Act of 1934 registration and reporting requirements. There is also no reconciliation between financial statements prepared under the local GAAP and the U.S. GAAP. As such, the financial statements of these firms are based on local GAAP, and are not comparable with those of other firms (e.g., Chinese RM firms). In addition, these firms are not under U.S. jurisdiction. See the SEC's "Investor Bulletin: American Depositary Receipts" for discussions of the disclosure and reporting requirements on ADR firms.

[17] There are 3 Chinese RM firms and 21 Chinese ADR firms that were listed before 2001. Data for U.S. RM firms involving shell firms before 2001 are not available from DealFlow Media. Excluding these 24 Chinese firms from the sample does not affect the results.

industry classification. Most of the U.S.-listed Chinese firms are from the business equipment, manufacturing, healthcare, or wholesale and retail industries. Most of the U.S. RM firms are in the business equipment, healthcare, or consumer non-durables industries.

[Please insert Table 1 here]

To test H1, we need a sample of U.S. IPO firms. As small and poorly performing firms tend to use the RM process to access the capital markets, and as these firm characteristics are correlated with financial reporting quality, we use two approaches jointly to control for this potential self-selection issue. First, we use U.S. IPO firms matched on the trading venue (NYSE, NASDAQ, AMEX, or OTC), industry, year and size as control firms. Second, as discussed below, we include a comprehensive list of variables that prior research shows to affect financial reporting quality as the control variables. We believe that these two approaches address the potential confounding effects of the differences in firm fundamentals between RM and IPO firms, and that the documented results capture the RM effect on financial reporting quality for U.S. firms.

We use the same methodology to identify matched U.S. IPO firms for Chinese RM firms.

Measurement of Financial Reporting Quality

As there are no universally accepted measures of financial reporting quality, we use a wide range of measures to triangulate our results (Dechow et al. 2010). The use of multiple measures also helps to capture the different aspects of financial reporting quality. Specifically, we use both the probability of accounting restatements and several accrual-based measures to capture financial reporting quality. These measures have been used widely in accounting studies. One benefit of using the probability of accounting restatements is that it is subject to fewer measurement error issues. The drawback of this measure is that it is influenced by the

effectiveness of the detection of the earnings management that ultimately leads to restatements. To the extent that Chinese RM firms have weaker bonding incentives (which can reduce the effectiveness of detection), we might not be able to find results consistent with H2 and H3.[18] The analysis of accrual-based financial reporting quality measures therefore complements the analysis of restatements. While the accrual-based measures are likely to capture earnings management tactics within the GAAP boundaries, restatements can capture financial reporting activities beyond such boundaries (Lang et al. 2006). As such, consistent results from these analyses can enhance our confidence in the inferences.

We collect information on restatements from Audit Analytics, which covers the restatements announced since 2000. We include all restatements on which data are available in the sample. In addition, we separate errors from accounting irregularities. To identify accounting irregularities, we follow the procedure outlined by Hennes et al. (2008) and cross-check with the fraud cases listed in Jindra et al. (2012), Siegel and Wang (2013), and Ang et al. (2014).

We use four accrual-based financial reporting quality measures. The following is a brief description. (Please see Appendix A for a more detailed discussion.) The first measure is the absolute value of discretionary accruals ($|DA|$), which is estimated from the Jones model as modified in Dechow et al. (1995). The second measure is based on the cross-sectional Dechow and Dichev (2002) model, as modified in McNichols (2002), Francis et al. (2005), and Ball and Shivakumar (2006). The absolute value of the residual from the regression ($|DD|$) is used as a proxy for financial reporting quality. The third measure is the absolute value of discretionary revenue ($|DR|$), which is the residual estimated from a regression of accounts receivable on the

[18] Srinivasan et al. (2015) find that the restatement frequency of foreign firms listed on U.S. exchanges is lower than that of U.S. firms. Furthermore, they find that there is no positive association between restatement frequency and internal control weaknesses for foreign firms from countries with weak rule of law. They interpret these results as indicating that weak rule of law negatively affects the likelihood of detecting and reporting accounting misstatements.

change in revenue, as developed by McNichols and Stubben (2008) and Stubben (2010). The fourth measure is based on the natural logarithm of the ratio of the absolute value of accruals to cash flows, $ln|ACCR/OCF|$, as developed and used by Burgstahler et al. (2006) and Hope et al. (2013). Firms may overstate earnings without affecting cash flows to achieve certain earnings targets or to report good performance in specific instances through accrual choices. The higher the ratio, the lower the financial reporting quality.

We also conduct a principal component analysis to capture the common construct underlying the four accrual-based financial reporting quality measures. We define the financial reporting index (*FRQ*) as the principal component that has the highest eigenvalue.[19]

Descriptive Statistics

Table 2 reports the descriptive statistics for Chinese RM firms, U.S. RM firms, Chinese ADR firms, and the matched U.S. IPO firms. Panel A reports the distribution of restated firm-years for the full sample and by year. Chinese RM firms have a much higher likelihood of restatements (23 percent) than U.S. RM firms (9 percent), Chinese ADR firms (5 percent), or matched U.S. IPO firms (13 percent). There is no obvious year effect.

[Please insert Table 2 here]

Panel B of Table 2 reports descriptive statistics on other variables. Chinese RM firms have a higher likelihood of both errors and accounting irregularities. They also have lower financial reporting quality than other types of firms, according to the accrual-based measures. In terms of the control variables used in the financial reporting quality analysis, we find that U.S. RM firms stand out as having the highest market-to-book ratio and sales growth. Like Lee et al. (2015), we find that Chinese RM firms outperform U.S. RM and IPO firms by having higher ROE. Chinese

[19] This is the only factor with an eigenvalue larger than one (2.4). It explains 48.5 percent of the sample variance and is positively correlated with each individual measure.

ADR firms also appear to be larger than other firms. Chinese RM firms have the highest capital needs, and the matched U.S. IPO firms have the lowest capital needs.

IV. FINANCIAL REPORTING QUALITY OF CHINESE RM FIRMS

Due to research design differences, we first present the analysis of the likelihood of restatements, and then the analysis of accrual-based financial reporting quality measures.

Analysis of the Likelihood of Restatements

To test H1 ~ H3, we estimate the following logit regression:

$$Prob(Restatement_{it}) = \alpha + \beta_1 RM_{it} + \beta_2 China_{it} + \beta_3 RM_{it} \times China_{it} + \boldsymbol{\gamma} Controls_{it-1} + \boldsymbol{\varphi} Year\ dummies + \boldsymbol{\theta} Industry\ Dummies + \varepsilon_{it} \quad (1)$$

The dependent variable, *Restatement*, is a dummy variable that equals 1 if the financial statement of firm *i* in year *t* is restated later, and 0 otherwise. The RM firm indicator variable, *RM*, equals 1 for Chinese or U.S. RM firms, and 0 for U.S. IPO or Chinese ADR firms. The Chinese firm indicator variable, *China*, equals 1 for Chinese RM or ADR firms, and 0 for U.S. RM or IPO firms. The sample includes Chinese RM firms, U.S. RM firms, Chinese ARD firms, and matched U.S. IPO firms.[20] The reported *z*-statistics are based on firm- and year-clustering-adjusted standard errors. Under this specification, coefficient β_1 captures the difference in the likelihood of having accounting restatements between U.S. RM and U.S. IPO firms, i.e., the RM effect for U.S. firms. Coefficient β_2 captures the difference in the likelihood of accounting restatements between Chinese ADR and U.S. IPO firms, i.e., the weak country effect for ADR/IPO firms. Coefficient β_3 captures the incremental RM effect for Chinese firms, i.e., the

[20] Note that we include both the matched U.S. IPO firms for Chinese RM firms as well as those for U.S. RM firms. The inferences remain the same if we only include the matched U.S. IPO firms for U.S. RM firms. In untabulated analyses, we also conduct pair-wise comparisons (Chinese RM firms with matched U.S. IPO firms, U.S. RM firms with matched U.S. IPO firms, Chinese RM firms with Chinese ADR firms, and Chinese RM firms with U.S. RM firms) and the inferences are the same. We report the pooled regression results to simplify the presentation.

incremental weak country effect for RM firms. As such, the RM effect for Chinese firms is captured by $\beta_1 + \beta_3$, and the weak country effect for RM firms is captured by $\beta_2 + \beta_3$. The interpretations of the coefficients and hypothesis testing are summarized as follows:

	IPO / ADR firms	RM firms	RM effect
U.S. firms		β_1	For U.S. firms: β_1 H1: $\beta_1 > 0$
Chinese firms	β_2	$\beta_1 + \beta_2 + \beta_3$	For Chinese firms: $\beta_1 + \beta_3$ H2: $\beta_1 + \beta_3 > 0$
Weak country effect	For IPO/ADR firms: β_2	For RM firms: $\beta_2 + \beta_3$ H3: $\beta_2 + \beta_3 > 0$	Difference in differences: β_3

Control variables include the variables that prior research suggests affect financial reporting quality: the market-to-book ratio (*M/B*), sales growth (*Growth*), leverage (*LEV*), firm size (*Size*), capital needs (*Capital_Need*), firm performance (*ROE*, *Loss*), operating cycle (*Op_Cycle*), and inventory (*Inventory*).[21] Please see Appendix B for the definition of these variables. We also include industry and year dummies to control for the industry and year fixed effects. As such, we do not tabulate the coefficient on intercept.

Table 3 reports the regression results, with Model (1) of Panel A for the regression coefficients, and Panel B for hypothesis testing based on the likelihood of all restatements.

[Please insert Table 3 here]

Before investigating why Chinese RM firms have lower financial reporting quality, we first confirm that they indeed have lower financial reporting quality than matched U.S. IPO firms. The difference in the likelihood of accounting restatements between Chinese RM and U.S. IPO

[21] In an untabulated sensitivity test, we also control for the standard deviation of quarterly earnings, and obtain qualitatively similar results.

firms is captured by $\beta_1 + \beta_2 + \beta_3$. As reported in Panel B of Table 3, the sum of these three coefficients is significantly positive ($z = 5.32$), indicating that Chinese RM firms indeed exhibit a higher likelihood of restatements than U.S. IPO firms.

Test of H1 and H2: The RM Effect

To test H1, we compare the financial reporting quality of U.S. RM firms with that of matched U.S. IPO firms to investigate whether the RM effect leads to lower financial reporting quality for U.S. RM firms. As discussed above, this effect is captured by the coefficient on *RM*, β_1. As reported in Table 3, β_1 is insignificantly different from zero, suggesting that U.S. RM firms do not differ from matched U.S. IPO firms in the likelihood of restatements.

To test H2, we compare the financial reporting quality of Chinese RM firms with that of Chinese ADR firms. This effect is captured by the sum of the coefficient on *RM* and that on the interaction term, $\beta_1 + \beta_3$. As reported in Panel B of Table 3, $\beta_1 + \beta_3$ is significantly positive ($z = 5.45$). This result indicates that Chinese RM firms are more likely to have accounting restatements than Chinese ADR firms, which is consistent with H2 that the financial reporting quality of Chinese RM firms is lower than that of Chinese ADR firms.

As discussed above, we include Chinese RM firms traded on the major stock exchanges or on the OTC market, but for the Chinese ADR firms we include only those traded on major stock exchanges, due to data limitations. To ensure that the above results are not driven by the trading venue difference, we match Chinese RM firms with Chinese ADR firms based on their trading venue, industry, year, and size. The untabulated results are quantitatively similar.

In summary, the results from the tests of H1 and H2 indicate that although the RM effect does not explain lower financial reporting quality for U.S. RM firms, it does for Chinese RM firms.

Test of H3: The weak Country Effect

Next, we compare the financial reporting quality of Chinese RM firms with that of U.S. RM firms to investigate the weak country effect. As both groups of firms are subject to the same RM-related issues and filing rules, the difference between these two groups of firms, if any, should be driven by country-related factors such as legal enforcement and investor protection. As discussed above, the weak country effect for RM firms is captured by the sum of the coefficient on *China* and that on the interaction term, $\beta_2 + \beta_3$. As reported in Panel B of Table 3, $\beta_2 + \beta_3$ is significantly positive ($z = 4.26$). These results are consistent with hypothesis H3 that the weak legal enforcement and weak investor protection for Chinese RM firms lead to lower financial reporting quality for Chinese RM firms.[22]

One might argue that this result is not surprising, given the finding of Lang et al. (2006) that foreign firms listed in the U.S. have lower financial reporting quality than U.S. domestic firms.[23] As discussed above, β_2 captures the difference in financial reporting quality between Chinese ADR and U.S. IPO firms. Also as reported in Panel A, β_2 is insignificantly different from zero. This result differs from that of Lang et al. (2006), likely due to the use of different financial reporting quality measures. While we use the likelihood of restatements to capture financial reporting quality, Lang et al. use accrual-based measures. As reported in Srinivasan et

[22] The arguments underlying our hypotheses imply that RM firms from all countries with weak legal enforcement and investor protection are likely to have lower financial reporting quality than U.S. IPO firms or ADR firms from the corresponding countries. However, it is challenging to test this prediction due to the data limitations—after imposing all the data requirements, there are only 22 firm-years from 12 foreign RM firms. Nevertheless, in an untabulated analysis, we find that foreign RM firms have similar financial reporting quality to that of foreign ADR firms and U.S. RM firms. However, these results should be interpreted with caution for two reasons: (1) the sample includes RM firms from different countries, some of which have strong investor protection, and (2) the sample size is very small. In addition, due to the small sample size, we cannot test whether RM firms from other foreign countries with lower investor protection and weaker enforcement have poor financial reporting quality.

[23] As discussed in Leuz (2006), the findings of Lang et al. (2006) indicate that cross-listing and bonding incentives improve financial reporting quality, but not to the extent that the financial reporting quality of cross-listed firms is fully comparable with that of U.S. firms. Leuz argues that this difference might be attributed to differential U.S. legal enforcement between the cross-listed firms and U.S. firms, and to the differences in firm-level reporting incentives.

al. (2015), foreign firms listed in U.S. exchanges have a lower frequency of restatements. To further examine whether the weak country effect alone explains these results, we investigate the interaction of the RM and weak country effects in explaining the financial reporting quality of Chinese RM firms, β_3. As reported in Panel A, the coefficient on the interaction term is significantly positive ($z = 2.65$). This result confirms that the combination of the RM and weak country effects contributes to the lower financial reporting quality of Chinese RM firms.

Analysis of Errors and Accounting Irregularities

The above analyses are based on all accounting restatements. To investigate whether the results are driven by errors, accounting irregularities, or both, we separately analyze the likelihood of errors and irregularities, and report the results respectively in Models (2) and (3) of Table 3, Panel A. Note that when we analyze the likelihood of errors, we drop the observations with accounting irregularities from the sample, as these cases are generally regarded as worse than errors. As is common in the literature, we keep observations with errors when analyzing the likelihood of irregularities, and the dependent variable, *Irregularity*, is set as 0 for these observations. (Excluding these observations from the analyses leads to the same results.) We find that Chinese firms, whether RM firms or ADR firms, have higher likelihood of accounting errors than their counterparts. There is no evidence of an RM effect for China or for U.S. firms. In contrast, when we analyze the likelihood of accounting irregularities, we find that the coefficients on *RM* and *China* are insignificantly different from zero, but the coefficient on the interaction term is significantly positive ($z = 2.58$). Overall, we find that the results documented above are driven by the likelihood of accounting irregularities.

Analysis of Accrual-based Measures

We use the following regression model to test the hypotheses based on accrual-based

measures:

$$FRQ_{i,t} = \alpha + \beta_1 RM_{it} + \beta_2 China_{it} + \beta_3 RM_{it} \times China_{it} + \boldsymbol{\gamma} Controls_{i,t} + \boldsymbol{\delta} Year\ Dummies + \boldsymbol{\theta} Industry\ Dummies + \varepsilon_{i,t} \quad (2)$$

The dependent variable, *FRQ*, is one of the following variables: the absolute value of discretionary accruals (|*DA*|), the absolute value of working capital accruals (|*DD*|), the absolute value of discretionary revenue (|*DR*|), the natural logarithm of the absolute value of the ratio of accruals to operating cash flows (*ln*|*ACCR/OCF*|), or the common factor. Higher variable values imply lower financial reporting quality. The model specification and the interpretation of the coefficients are the same as with Equation (1).

Panel A of Table 4 reports the regression results. The coefficient on *RM* is insignificant, indicating that the RM effect itself does not lead to lower financial reporting quality for U.S. firms. The coefficient on *China* is significantly positive for the cases of |DD| and the common factor, implying that Chinese ADR firms have lower financial reporting quality than U.S. IPO firms, as is consistent with the findings in Lang et al. (2006). More importantly, the coefficient on the interaction term is significantly positive in all specifications with the exception of *ln*|*ACCR/OCF*|. As summarized in Panel B of Table 4, the inferences are the same as those based on the likelihood of accounting restatements.

[Please insert Table 4 here]

Overall, the results based on accrual-based measures are consistent with those based on the likelihood of restatements. The lower financial reporting quality of Chinese RM firms is driven by a combination of the RM and the weak country effects.

V. CHINESE RM VERSUS ADR FIRMS: BONDING INCENTIVES AND CORPORATE GOVERNANCE

The results reported above indicate that Chinese RM firms have lower financial reporting quality than other firms, and that this is due to a combination of both the RM and the weak country effects. The RM effect by itself does not explain the poor financial reporting quality, because U.S. RM firms have similar financial reporting quality to that of U.S. IPO firms. The weak country effect alone does not explain the results either. Otherwise, Chinese RM firms would not have lower financial reporting quality than Chinese ADR firms. Given that Chinese RM and Chinese ADR firms are subject to the same weak legal enforcement and legal protection, it is important to understand why Chinese RM firms have weaker financial reporting quality. We hypothesize in H4a and H4b that Chinese RM firms have weaker bonding incentives, and that the less-scrutinized RM process provides these firms with a means to access the U.S. capital markets. In this section, we first investigate whether bonding incentives are indeed weaker for Chinese RM firms than for Chinese ADR firms, and then we examine whether the RM firms have poorer corporate governance than Chinese ADRs.

Test of H4a: Is the Bonding Incentive Weaker for Chinese RM Firms?

Lel and Miller (2008) argue that if the bonding to more stringent disclosure and reporting requirements is effective, then the corporate governance of cross-listed firms should improve. Research on CEO turnover (i.e., Shleifer and Vishny 1997) demonstrates that one outcome of effective corporate governance is the replacement of poorly performing CEOs. Building on this line of research, Lel and Miller (2008) use CEO turnover-performance sensitivity to capture the outcomes of corporate governance. They find that the CEO turnover-performance sensitivity is higher for cross-listed firms than for non-cross-listed firms, and that this effect is more pronounced when bonding is more effective. It thus follows that if Chinese RM firms have weaker bonding incentives and their bonding is less effective, then these firms should have lower

CEO turnover-performance sensitivity than Chinese ADR firms.[24] Following Lel and Miller (2008), we use the following regression to test this prediction:

$$\Pr(CEO\_Turnover_{it}) = \alpha + \beta_1 PER_{i,t-1} + \beta_2 CRM_i + \beta_3 PER_{i,t-1} \times CRM_i + \gamma Controls_{i,t} + \varphi Year\ Dummies + \lambda Industry\ Dummies + \varepsilon_{it} \quad (3)$$

$CEO\_Turnover_{it}$ is a binary variable that equals 1 if the CEO of firm *i* is replaced in year *t*. Following Lel and Miller (2008) and other studies on CEO turnover, we use two measures to capture firm performance (*PER*). The first measure is *ROA*, which is the earnings before interest and taxes divided by total assets. The second measure is industry-adjusted stock returns. We use the lagged performance measure to avoid overlapping the replaced CEO's performance with that of the new CEO. As CEO turnover-performance sensitivity is negative, we expect a positive coefficient on the interaction term if Chinese RM firms have weaker bonding incentives. We control for firm size, industry and year fixed effects (as in Lel and Miller (2008)), and for the control variables included in Equation (1), with the exception of *ROE*. *ROE* is not included because the model already includes the performance measure.

We hand-collect CEO turnover data from the financial statements and the Audit Analytics database. Untabulated analyses indicate that the CEO turnover ratio is 8.92 percent for Chinese RM firms and 15.87 percent for Chinese ADR firms, and that this difference is significant at the 0.01 level.

Table 5 presents the regression results. As in Lel and Miller (2008), the probability of CEO turnover is negatively correlated with firm performance (z = -2.98 and -22.66 when performance is measured as *ROA* and stock returns, respectively). More importantly, the probability of CEO turnover is less sensitive to firm performance for Chinese RM firms than for Chinese ADR firms.

[24] DeFond and Hung (2004) find that CEO turnover-performance sensitivity varies with country-specific factors such as the effectiveness of investor protection. To the extent that CEO turnover-performance sensitivity might not be a valid measure of bonding incentives for Chinese firms, we might not find results consistent with H4a.

The coefficient on *PER* × *CRM* is significantly positive at the 0.05 level (z = 2.04 and 2.05, respectively).[25] This result is consistent with H4a that Chinese RM firms have weaker bonding incentives, i.e., lower incentives to improve corporate governance for signaling their intention to protect minority shareholder rights.

[Please insert Table 5 here]

Test of H4b: Corporate Governance of Chinese RM Firms vs. Chinese ADR Firms

In this section, we test H4b by examining whether the RM process attracts Chinese firms with weak bonding incentives, as exemplified by their corporate governance features. We first investigate the differences in corporate governance between Chinese RM and ADR firms, and then examine the extent to which these factors explain their differences in financial reporting quality.

We hand-collect all of the required information from 10-Ks, 20-Fs, and proxy statements filed by Chinese firms, including the data on insider ownership (holdings by the officers and directors), the existence of foreign blockholders (non-Chinese owners with 10 percent or more of the shares), board characteristics (board size, board independence, and whether the CEO is the chairman), whether the CEO is the founder of the firm, and whether the CEO receives option grants.[26]

Panel A of Table 6 reports descriptive statistics on these variables separately for Chinese RM and Chinese ADR firms, and the *p*-values for the differences in means and medians. We find that compared to Chinese ADR firms, Chinese RM firms have higher insider ownership, fewer foreign blockholders, smaller and less independent boards, higher likelihood of having the CEO

[25] A Wald test indicates that the net turnover-performance sensitivity for Chinese RM firms (*PER* + *PER* × *CRM*) is insignificantly different from zero (p = 0.418 and 0.875, respectively).
[26] Leuz et al. (2003) argue that higher insider ownership weakens firm governance, and Siegel (2005) argues that having a large foreign shareholder can improve the governance of a firm.

as the chairman, and lower likelihood of having a founder CEO or of granting the CEO option-based compensation.

[Please insert Table 6 here]

To ensure that these results are not driven by other firm characteristics, Panel B of Table 6 reports the results from regressing the indicator variable for Chinese RM firms (versus Chinese ADR firms) on the above-described corporate governance variables. As reported in Column (1), we find results similar to those in the univariate analysis, except that board independence is not significantly associated with the likelihood of choosing the RM method for listing. In Column (2), we further control for firm fundamental characteristics. The results remain the same except that Chinese RM firms appear to have higher board independence.[27]

Overall, the results are consistent with H4b that corporate governance in Chinese RM firms is weaker than that in Chinese ADR firms.

Next, we use a two-stage process to examine whether the differences in corporate governance features lead to differences in financial reporting quality. In the first stage, we predict the probability of a Chinese firm being an RM firm, using the specification as in Column (2) of Table 6, Panel B. In the second stage, we use the predicted value of *CRM* (*CRM_P*) and the residual (*CRM_R*), as generated from the first stage model, to explain the financial reporting quality of Chinese RM and ADR firms:

$$FRQ_{i,t} = \alpha + \beta_1 CRM\_P_{i,t} + \beta_2 CRM\_R_{i,t} + \boldsymbol{\gamma} Controls_{i,t} + \boldsymbol{\delta} Year\ Dummies + \boldsymbol{\theta} Industry\ Dummies + \varepsilon_{i,t} \quad (4)$$

The dependent variable, *FRQ*, is the likelihood of accounting restatements or the common factor generated from the individual accrual-based measures. If the weak corporate governance of

[27] This difference might reflect the different regulatory requirements concerning board independence for Chinese RM firms and Chinese ADR firms. As discussed above, Chinese ADR firms are exempt from some regulatory requirements related to disclosure and governance.

Chinese RM firms leads to lower financial reporting quality, then *CRM_P* should be negatively correlated with financial reporting quality, resulting in a positive coefficient on *CRM_P*. The coefficient on the residual value of *CRM* (*CRM_R*) captures the effect of other unidentified differences between Chinese RM and ADR firms in terms of financial reporting quality.

Table 7 reports the regression results: Panel A for the analysis of accounting restatements, and Panel B for the analysis of the common factor of the accrual-based financial reporting quality measures. As the sample size is smaller due to additional data requirements, we first investigate whether Chinese RM firms have lower financial reporting quality (as documented above), and we obtain quantitatively similar results. Column (2) of each panel reports the results from Equation (4). We find that the coefficient on *CRM_P* is significantly positive. This result indicates that the corporate governance decisions made by Chinese firms are strongly correlated with financial reporting quality. The coefficient on *CRM_R* in each of the panels is also significantly positive, although it is smaller than that on *CRM_P*.[28]

[Please insert Table 7 here]

In summary, the results presented in this section are consistent with the notion that Chinese RM firms have weaker bonding incentives and are less willing than Chinese ADR firms to improve their corporate governance to signal an intention to protect shareholder rights. These factors are correlated with a firm's decision to choose the RM approach for accessing U.S. capital markets, and these factors partially explain the lower financial reporting quality of Chinese RM firms.

We would like to clarify that we consider only one manifestation of weak corporate governance—poor financial reporting quality. Corporate governance also affects other corporate

[28] An untabulated analysis indicates that the coefficient on *CRM_P* is significantly larger than that on *CRM_R*. The *p*-value of the Wald test is 0.09 (in Panel A), and that of the F-test is 0.01 (in Panel B). Note that our focus is the coefficient on *CRM_P*, not the coefficient on *CRM_R* or the difference in coefficient between *CRM_P* and *CRM_R*.

decisions (e.g., investments), and it influences firm value. As such, the results presented above do not imply that Chinese RM firms have suboptimal corporate governance. More importantly, determining whether Chinese RM firms have suboptimal corporate governance is beyond the scope of this paper, and this issue is left for future research.

Change in Financial Reporting Quality after the Listing Process

To provide further insight on whether the self-selection argument discussed above is the primary driver for the lower financial reporting quality of Chinese RM firms (relative to Chinese ADR firms), we examine changes in financial reporting quality after the listing process for Chinese RM firms. Due to the strict requirements for ongoing reporting, one would expect that the financial reporting quality should improve for Chinese RM firms after the listing process. However, the lower levels of investor protection in China and the difficulties that the SEC has in disciplining listed foreign firms both suggest that RM firms might not experience an improvement in financial reporting quality. Therefore, whether Chinese RM firms show improvements in financial reporting quality after their listings is an empirical question. The untabulated results indicate that Chinese RM firms have similar or better financial reporting quality after the RM process, depending on the measure used to capture financial reporting quality.[29] However, despite this improvement after the RM process, the quality of financial reporting is still lower than that of Chinese ADR firms. This analysis thus further supports our main inference: Chinese firms that have weaker bonding incentives and lower financial reporting quality commonly choose to use the less-scrutinized RM process to obtain access to U.S. capital

[29] For this analysis, we collect financial statement information from Super 8-Ks for the sample of 287 Chinese RM firms. More than half (167) of these firms do not have meaningful financial statements in their Super 8-K filings. We then require the firms to have non-negative common shareholders' equity, non-zero sales, assets of one million dollars or more, and at least one year of data. These requirements result in a total of 186 firm-years with basic financial statement data (i.e., equity, assets, and sales) from 89 firms. By further requiring the firms to have data on the control variables and dependent variables, we are left with 22 firm-years from 21 Chinese RM firms. We then combine these observations with the post-RM observations of these firms to conduct the analysis.

markets, resulting in lower financial reporting quality.

Although these additional analyses provide results consistent with the self-selection argument based on bonding incentives, we would like to caution the readers that these change analyses are based on a small sample.

VI. THE MARKET'S PERCEPTION OF CHINESE RM FIRMS' FINANCIAL REPORTING QUALITY

The results so far indicate that Chinese RM firms have lower financial reporting quality due to a combination of the RM effect and the weak country effect. It is natural to ask whether the markets recognize Chinese RM firms' low financial reporting quality. We explore this issue in this section.

One commonly used proxy for the capital markets' *perception* of financial reporting quality is the earnings response coefficient (ERC) (e.g., Wilson 2008; Chen et al. 2014). In this section, we examine whether the ERC differs between Chinese RM firms and other firms. Column (1) of Table 8 reports the results based on quarterly earnings announcements. Using the standard research design, we find that Chinese RM firms have ERCs similar to those of matched U.S. IPO firms, Chinese ADR firms, and U.S. RM firms. These results indicate that the market does not recognize the low financial reporting quality of Chinese RM firms at the times when their earnings are announced.

[Please insert Table 8 here]

In case the market reacts to the poor earnings quality of Chinese RM firms throughout the year, Column (2) of Table 8 reports the annual regression results, based on the regression of annual returns on earnings changes and levels. We find that the market reacts less positively to

the earnings changes of Chinese RM firms than to those of other firms. In other words, the earnings changes of Chinese RM firms are viewed as less credible than those of other firms.

Overall, although we find that the market does not recognize the low financial reporting quality of Chinese RM firms at the times that quarterly earnings are announced, the market does react less positively to the changes in the earnings of Chinese RM firms throughout the year.

VII. CONCLUSION

In this paper, we find that Chinese RM firms have lower financial reporting quality (proxied for by the likelihood of accounting restatements and four accrual-based measures) than matched U.S. IPO firms, U.S. RM firms, or Chinese ADR firms. However, we do not find any difference in financial reporting quality between U.S. RM firms and matched U.S. IPO firms. These results indicate that the lower financial reporting quality of Chinese RM firms results from the joint effects of using the RM approach and the weak legal enforcement over Chinese firms. Additional analyses indicate that compared with Chinese ADR firms, Chinese RM firms have lower CEO turnover-performance sensitivity (a measure of the strength of the bonding incentive). These RM firms also exhibit poorer corporate governance, which partly explains their low quality of financial reporting.

This paper extends the literature by shedding light on why Chinese RM firms have low financial reporting quality. Our results indicate that the RM process provides those Chinese firms that have weak bonding incentives and poor governance with the opportunity to access the U.S. capital markets, resulting in the poor financial reporting quality of Chinese RM firms. These results should be of interest to regulators who consider the rules for RMs and to investors who trade these firms' shares.

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Appendix A
Measurement of Individual Accrual-based Financial Reporting Quality Variables

This appendix describes the detailed measurement of the four individual accrual-based financial reporting quality measures used in this study.

Our first measure is the absolute value of discretionary accruals. Discretionary accruals are estimated from the modified Jones model, as in Dechow et al. (1995). Specifically, we estimate the following regression model:

$$ACCR_{i,t} = \alpha_1(\frac{1}{TA_{i,t}}) + \alpha_2(\Delta REV_{\mathrm{i,t}} - \Delta REC_{\mathrm{i,t}}) + \alpha_3 PPE_{i,t} + \varepsilon_{i,t},$$

where *ACCR* is total accruals, calculated as the difference between income before extraordinary items and operating cash flows, *TA* is total assets at the beginning of the year, *ΔREV* is the change in sales, *ΔREC* is the change in accounts receivable, and *PPE* is gross property, plant, and equipment. In the above equation, all of the variables are scaled by *TA*. The above regression model is estimated by industry-year using all firm-year observations (industries being defined based on two-digit SIC codes). The regression residual is discretionary accruals (*DA*). We use the absolute value of *DA* (|*DA*|) as our first measure of financial reporting quality.

Our second measure is based on a modified version of the cross-sectional Dechow-Dichev (2002) model. The Dechow-Dichev model focuses on the strength of the relation between current accruals and past, present, and future cash flows. In particular, we use the Dechow-Dichev model as modified by McNichols (2002) and Francis et al. (2005), adjusting for negative cash flows (Ball and Shivakumar 2006). Specifically, we estimate the following model for each industry-year that has at least 20 observations:

$$WCA_{i,t} = \alpha_0 + \beta_1 OCF_{\mathrm{i,t\text{-}1}} + \beta_2 \mathrm{OCF}_{\mathrm{i,t}} + \beta_3 OCF_{i,t+1} + \beta_4 \Delta REV_{i,t} + \beta_5 PPE_{i,t} + \beta_6 DOCF_{i,t} + \beta_7 OCF_{i,t} \times DOCF_{i,t} + \varepsilon_{i,t},$$

where *WCA* is working capital accruals, measured as the change in non-cash current assets minus the change in current liabilities (other than short-term debt and taxes payable), scaled by lagged total assets; *OCF* is operating cash flows, measured as the sum of net income, depreciation, and amortization, minus *WCA*, scaled by lagged total assets; *ΔREV* and *PPE* are defined as above; and *DOCF* is an indicator variable for negative operating cash flows. The residual from the above equation represents the component in the current accruals that are not associated with operating cash flows and that cannot be explained by the change in revenue or the level of *PPE*. We use the absolute value of this residual (|*DD*|) as a proxy for financial reporting quality.

Our third measure is the absolute value of discretionary revenues based on McNichols and Stubben (2008) and Stubben (2010). Specifically, we estimate the following regression for each industry-year that has at least 20 observations:

$$\Delta AR_{i,t} = \alpha_0 + \beta_1 \Delta REV_{\mathrm{i,t}} + \varepsilon_{i,t},$$

where *ΔAR* represents the annual change in accounts receivable scaled by lagged total assets, and *ΔREV* is as defined above. Discretionary revenue (*DR*) is the residual from this regression and its absolute value, |*DR*|, is used as a proxy for financial reporting quality.

Our fourth measure is based on the ratio of the absolute value of accruals to cash flows (Burgstahler et al. 2006; Hope et al. 2013). Firms may overstate earnings to achieve certain targets or to report good performance in specific instances, such as equity issuance (Teoh et al. 1998). Similarly, in years with poor performance, firms may boost their earnings using reserves or engage in aggressive accounting practices. Earnings can be temporarily inflated due to accrual choices, but cash flows remain unaffected. In such cases, the higher the ratio, the lower the financial reporting quality. To avoid the effect of extreme values, we use the log transformation of this ratio, $ln|ACCR/OCF|$, as our fourth proxy.

Appendix B
Variable Definitions

Variable	Definition
Dependent variables	
Restatement	Restatement dummy, equal to 1 if the financial statement of the firm in that year is restated later, and 0 otherwise;
Error	Indicator variable for accounting errors, equal to 1 if the financial statement of the firm in that year is restated later and the restatement is classified as an error, and 0 otherwise;
Irregularity	Indicator variable for accounting irregularities, equal to 1 if the financial statement of the firm in that year is restated later and the restatement is classified as an accounting irregularity, and 0 otherwise;
$\|DA\|$	Absolute value of discretionary accruals, as described in Appendix A;
$\|DD\|$	Absolute value of discretionary working capital accruals, as described in Appendix A;
$\|DR\|$	Absolute value of discretionary revenue, as described in Appendix A;
$ln\|ACCR/OCF\|$	The natural logarithm of the ratio of the absolute value of total accruals to operating cash flows, as described in Appendix A;
FRQ	The financial reporting quality index, measured as the common factor from the principal component analysis of the four individual measures: $\|DA\|$, $\|DD\|$, $\|DR\|$, and $ln\|ACCR/OCF\|$;
Independent variables	
RM	RM firm dummy, equal to 1 if the firm is an RM firm, and 0 otherwise;
China	Chinese firm dummy, equal to 1 if the firm is a Chinese firm, and 0 otherwise;
CRM	Chinese RM firm dummy, equal to 1 if the firm is a Chinese RM firm, and 0 otherwise;
M/B	The market-to-book ratio, calculated as market value of equity divided by book value of equity;
Growth	Sales growth, measured as the percentage change in sales;
LEV	The leverage ratio, measured as total debt divided by total assets;
ROE	Return-on-equity, measured as income before extra-ordinary items divided by shareholders' equity;
Size	Firm size, measured as the natural logarithm of total assets;
Capital_Need	The percentage change in common stock, preferred stock, and long-term debt in the following year;
Loss	The cumulative percentage of sample years that the firm reported a loss during the sample period;
Op_Cycle	Operating cycle of the firm, measured as Inventory/Cost of Sales + Receivables/Sales;
Inventory	Inventory divided by total assets.

TABLE 1
Descriptive Statistics of Chinese RM Firms, U.S. RM Firms, and Chinese ADR Firms

Panel A: **Sample Distribution by the Year of Listing**

This table reports the distribution of sample firms based on the year when their shares were first listed in the U.S stock markets.

First Listing Year	Chinese RM firms	U.S. RM firms	Chinese ADR firms
2000 and earlier	3	0	21
2001	1	3	5
2002	2	12	1
2003	8	17	0
2004	22	49	8
2005	29	48	7
2006	47	38	11
2007	54	36	20
2008	46	26	14
2009	33	15	13
2010	34	17	26
2011	8	12	16
Total	287	273	142

Panel B: Sample Distribution by Exchanges at the Time of Data Collection

Firm Type	NYSE	NASDAQ	AMEX	OTC	Total
Chinese RM firms	6	82	28	171	287
U.S. RM firms	4	39	22	208	273
Chinese ADR firms	67	74	1	0	142
Total	77	195	51	379	

TABLE 1 (cont'd)

Panel C: Sample Distribution by Fama-French Industry Classification

Industry	Chinese RM firms	U.S. RM firms	Chinese non-RM firms
Consumer Non-Durables	36	12	8
Consumer Durables	13	8	3
Manufacturing	55	23	9
Oil, Gas and Coal Extraction and Products	7	27	5
Chemicals and Allied Products	19	9	4
Business Equipment	40	58	58
Telephone and Television Transmission	4	7	6
Wholesale, Retail and Some Services	34	15	8
Healthcare, Medical Equipment and Drugs	38	54	11
Others	41	60	30
Total	287	273	142

TABLE 2
Descriptive Statistics on Financial Reporting Quality and Control Variables

Panel A: Yearly Distribution of the Likelihood of Accounting Restatements

This table reports the distribution of the restated firm-years by year.

	Chinese RM firms		U.S. IPO firms matched with Chinese RM firms		U.S. RM firms		U.S. IPO firms matched with U.S. RM firms		Chinese ADR firms	
Year	N	mean	N	mean	N	mean	N	mean	N	mean
2001	4	0.00	3	0.00	0	NA	0	NA	27	0.04
2002	3	0.33	3	0.17	2	0.50	1	0.00	28	0.00
2003	5	0.20	4	0.13	4	0.25	2	0.00	27	0.07
2004	9	0.22	8	0.13	15	0.13	8	0.12	37	0.11
2005	17	0.41	13	0.27	25	0.12	15	0.13	45	0.11
2006	36	0.22	28	0.11	36	0.06	30	0.06	55	0.04
2007	62	0.24	54	0.10	53	0.09	46	0.06	77	0.01
2008	96	0.19	84	0.11	55	0.13	46	0.10	85	0.07
2009	112	0.26	101	0.14	59	0.05	48	0.06	94	0.05
2010	93	0.20	87	0.11	54	0.06	39	0.07	113	0.02
2011	12	0.17	11	0.09	11	0.00	3	0.00	12	0.00
Total	449	0.23	396	0.13	314	0.09	238	0.07	600	0.05

Panel B: Descriptive Statistics on Financial Reporting Quality and Control Variables

	Chinese RM firms		U.S. IPO firms matched with Chinese RM firms		U.S. RM firms		U.S. IPO firms matched with U.S. RM firms		Chinese ADR firms	
	mean	median	mean	median	mean	median	mean	median	mean	median
					Dependent variables					
Restatement	0.23	0.00	0.13	0.00	0.09	0.00	0.07	0.00	0.05	0.00
Error	0.12	0.00	0.07	0.00	0.08	0.00	0.06	0.00	0.04	0.00
Irregularity	0.11	0.00	0.06	0.00	0.01	0.00	0.01	0.00	0.01	0.00
|DA|	0.17	0.12	0.12	0.07	0.22	0.13	0.17	0.09	0.10	0.06
|DD|	0.18	0.13	0.05	0.02	0.13	0.07	0.08	0.04	0.09	0.05
|DR|	0.12	0.07	0.05	0.02	0.10	0.04	0.07	0.03	0.06	0.03
ln|ACCR/OCF|	-0.44	-0.29	-0.49	-0.46	-0.54	-0.57	-0.53	-0.48	-0.45	-0.44
FRQ	0.68	0.33	-0.10	-0.29	0.42	0.11	0.24	-0.02	-0.38	-0.58
					Control variables					
M/B	2.99	1.40	3.56	1.50	5.90	3.79	4.52	2.33	2.56	1.58
Growth (%)	38.31	26.49	18.37	0.00	51.21	24.78	26.84	0.00	38.63	27.13
LEV (%)	14.03	8.11	16.99	9.72	13.94	3.67	12.98	5.15	13.55	5.59
ROE (%)	6.17	15.86	-5.49	0.50	-19.51	-36.21	-13.56	-18.28	8.34	10.27
Size	4.29	4.44	4.26	4.27	2.99	2.94	2.91	2.83	6.51	6.04
Capital_Need (%)	19.21	0.00	4.66	0.00	9.46	0.00	6.83	0.00	9.59	0.02
Loss (%)	13.91	0.00	43.44	40.00	35.70	33.33	49.27	45.45	12.92	0.00
Op_Cycle	0.66	0.46	0.56	0.32	0.81	0.25	0.71	0.28	0.43	0.29
Inventory	0.10	0.06	0.14	0.11	0.08	0.002	0.08	0.01	0.06	0.02

TABLE 3
Test of H1 ~ H3: Analysis of Accounting Restatements

Panel A: Regression Results

This table reports the Logit regression of the probability of restatement on indicators for firm types and control variables:

$$Prob(Restatement_{it}) = \alpha + \beta_1 RM_{it} + \beta_2 China_{it} + \beta_3 RM_{it} \times China_{it} + \gamma Controls_{it-1} + \varphi Year\ dummies + \theta Industry\ Dummies + \varepsilon_{it}$$

The sample includes Chinese RM firms, Chinese ADR firms, U.S. RM firms, and U.S. IPO firms. *RM* equals one for RM firms (i.e., Chinese RM or U.S. RM firms), and 0 otherwise. *China* equals one for Chinese firms (i.e., Chinese RM or Chinese ADR firms), and 0 otherwise. In Model (1), the dependent variable, $Restatement_{it}$, is a dummy variable that equals 1 if the financial statement of firm *i* in year *t* is restated later, and 0 otherwise. In Model (2) [(3)], the dependent variable is $Error_{it}$ ($Irregularity_{it}$), which equals 1 if the financial statement of firm *i* in year *t* is restated later and the restatement is classified as an error (irregularity), and 0 otherwise. The table reports the coefficient estimates, the corresponding Z statistics based on Wald chi-square adjusted for firm- and year-level clustering (in brackets), the number of observations, and the pseudo R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Please see Appendix B for variable definitions.

	All restatements (Model 1)	Errors (Model 2)	Irregularities (Model 3)
RM	0.593	0.696	0.244
	(1.60)	(1.48)	(0.29)
China	-0.011	1.577**	-1.114
	(-0.02)	(2.57)	(-0.82)
RM × China	1.475***	-0.178	3.399***
	(2.65)	(-0.24)	(2.58)
M/B	-0.002	-0.016	-0.026
	(-0.19)	(-1.46)	(-0.57)
Growth	0.100*	0.070	0.087
	(1.69)	(0.97)	(0.77)
LEV	-0.305	-0.765	-0.982
	(-0.43)	(-0.76)	(-0.73)
ROE	-0.202	-0.416*	-0.713
	(-1.06)	(-1.88)	(-1.41)
Size	-0.028	-0.141	0.272
	(-0.33)	(-1.33)	(1.64)
Capital_need	0.256*	0.185	0.110
	(1.89)	(1.00)	(0.54)
Loss	0.237	0.912	-0.713
	(0.52)	(1.59)	(-0.85)
Op_cycle	0.022	-0.031	-0.346
	(0.24)	(-0.28)	(-1.00)
Inventory	-0.168	0.143	1.669
	(-0.18)	(0.13)	(0.80)
Year effects	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes
N	1,997	1,938	1,997
Pseudo R^2	0.178	0.171	0.253

TABLE 3 (cont'd)

Panel B: Hypotheses Testing – All Restatements

This table summarizes the results for the test of hypotheses H1~H3 based on the analysis of the likelihood of all accounting restatements. For the coefficients presented in Panel A, the corresponding Z statistics are presented in parentheses. For the sum of coefficients, Wald tests are conducted and the corresponding Z statistics are presented in parentheses.

	IPO / ADR firms (1)	RM firms (2)	RM effect (2) – (1)
U.S. firms (a)		0.593 (1.60)	H1: For U.S. firms 0.593 (1.60)
Chinese firms (b)	-0.011 (-0.02)	2.057 *** (= 0.593-0.011+1.475) (5.32)	H2: For Chinese firms 2.068 *** (5.45)
Weak country Effect (b) – (a)	For IPO/ADR firms -0.011 (-0.02)	H3: For RM firms 1.464 *** (4.26)	Difference in differences 1.475 *** (2.65)

TABLE 4
Test of H1 ~ H3: Analysis of Accrual-based Financial Reporting Quality Measures

Panel A: Regression Results

This table reports the results from regressing the financial reporting quality measures on the indicators for firm types and control variables:

$$FRQ_{i,t} = \alpha + \beta_1 RM_{it} + \beta_2 China_{it} + \beta_3 RM_{it} \times China_{it} + \gamma Controls_{i,t} + \delta Year\ Dummies + \theta Industry\ Dummies + \varepsilon_{i,t}$$

The sample includes Chinese RM firms, Chinese ADR firms, U.S. RM firms, and matched U.S. IPO firms. *RM* equals one for RM firms (i.e., Chinese RM or U.S. RM firms), and 0 otherwise. *China* equals one for Chinese firms (i.e., Chinese RM or Chinese ADR firms), and 0 otherwise. The table reports the coefficient estimates, t-values based on standard errors adjusted for firm- and year-level clustering (in brackets), the number of observations, and the adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-test). Please see Appendix B for variable definitions.

	|DA|	*|DD|*	*|DR|*	*ln|ACCR/OCF|*	*FRQ*
RM	-0.008	0.006	0.001	0.041	0.053
	(-0.55)	(0.62)	(0.11)	(0.48)	(0.70)
China	0.005	0.049***	0.014	0.096	0.204**
	(0.38)	(4.60)	(1.25)	(1.11)	(2.02)
RM × China	0.044***	0.036*	0.042***	0.099	0.300**
	(2.69)	(1.77)	(3.53)	(0.79)	(2.41)
M/B	-0.000	0.000	-0.000	-0.007**	0.001
	(-1.42)	(0.21)	(-0.71)	(-2.57)	(0.61)
Growth	0.062***	0.035***	0.036***	0.046***	0.362***
	(9.82)	(6.74)	(5.25)	(2.75)	(9.40)
LEV	-0.004	-0.001	0.022*	1.320***	0.109
	(-0.21)	(-0.05)	(1.66)	(8.02)	(0.98)
ROE	-0.062***	-0.011**	0.007	-0.000	-0.205***
	(-6.32)	(-1.97)	(0.94)	(-0.01)	(-4.74)
Size	-0.013***	-0.011***	-0.007***	-0.027	-0.080***
	(-3.82)	(-6.10)	(-4.42)	(-1.49)	(-4.36)
Capital_need	0.002	0.004	-0.002	-0.074*	0.002
	(0.24)	(0.58)	(-0.30)	(-1.91)	(0.06)
Loss	-0.065***	-0.050***	-0.015	0.538***	-0.257***
	(-4.65)	(-6.69)	(-1.58)	(4.28)	(-2.85)
Op_cycle	0.008	0.008**	0.004	-0.040***	0.033
	(1.42)	(2.27)	(1.26)	(-2.74)	(1.28)
Inventory	0.062***	0.124***	0.054*	1.349***	0.753***
	(3.84)	(3.82)	(1.71)	(5.08)	(4.33)
Year effects	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes
N	1806	1736	1836	1776	1730
Adjusted R^2	0.401	0.307	0.314	0.198	0.432

TABLE 4 (cont'd)

Panel B: Hypotheses Testing – FRQ

This table summarizes the results for the test of hypotheses H1~H3 based on the analysis of the common factor of accrual-based financial reporting quality measures, *FRQ*. For the coefficients presented in Panel A, the corresponding t statistics are presented in parentheses. For the sum of coefficients, F-tests are conducted and the corresponding t-statistics are presented in parentheses.

	IPO / ADR firms (1)	RM firms (2)	RM effect (2) – (1)
U.S. firms (a)		0.053 (0.70)	H1: For U.S. firms 0.053 (0.70)
Chinese firms (b)	0.204 ** (2.02)	0.557 *** (= 0.053+0.204+0.300) (5.90)	H2: For Chinese firms 0.353 *** (3.68)
Weak country Effect (b) – (a)	For IPO/ADR firms 0.204 ** (2.02)	H3: For RM firms 0.504 *** (4.02)	Difference in differences 0.300 ** (2.41)

TABLE 5
Sensitivity of CEO Turnover to Firm Performance among U.S.-listed Chinese Firms

This table reports the logit regression of the probability of CEO turnover:

$$\Pr(CEO\_Turnover_{it}) = \alpha + \beta_1 PER_{i,t-1} + \beta_2 CRM_i + \beta_3 PER_{i,t-1} \times CRM_i + \gamma Controls_{i,t} + \varphi Year\ Dummies + \lambda Industry\ Dummies + \varepsilon_{it}$$

$CEO\_Turnover_{it}$ is an indicator for CEO turnover, which equals 1 if there is a change in CEO in year t, and 0 otherwise. *PER* is measured in two alternative ways: (1) the natural logarithm of 1 plus the ratio of earnings before interest and tax over total assets, and (2) the natural logarithm of 1 plus industry-adjusted stock return. Please see Appendix B for the definitions of other variables. This table reports the coefficient estimates, the corresponding *Z* statistics based on the Wald chi-square adjusted for firm- and year-level clustering (in brackets), the number of observations, and the pseudo R^2. All of the variables are Winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Performance measure: ROA	(2) Performance measure: Industry adjusted stock returns
PER	-4.377***	-0.389***
	(-2.98)	(-22.66)
CRM	-1.537***	-2.692***
	(-7.87)	(-5.32)
PER* × *CRM	**2.782****	**0.368****
	(2.04)	**(2.05)**
M/B	0.009	-0.038
	(1.63)	(-1.31)
Growth	-1.051***	-1.886***
	(-3.12)	(-3.11)
LEV	-1.107**	-0.663
	(-2.10)	(-0.50)
Size	0.119**	0.115
	(2.51)	(1.46)
Capital_Need	0.270	0.099
	(1.33)	(0.35)
Loss	-0.230	0.237**
	(-0.67)	(2.30)
Op_Cycle	-0.187**	-1.165*
	(-2.08)	(-1.70)
Inventory	-3.137*	-5.069
	(-1.88)	(-1.62)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
N	1,083	619
Pseudo R^2	25.4%	32.9%

TABLE 6
Corporate Governance and Financial Reporting Quality of U.S.-listed Chinese Firms

Panel A: Descriptive Statistics on Corporate Governance Characteristics of Chinese RM Firms and Chinese ADR Firms

This table reports descriptive statistics on the corporate governance characteristics of Chinese RM firms and Chinese ADR firms, and the *p*-value for the difference between these two samples. There are 686 observations from Chinese RM firms and 745 from Chinese ADR firms. (The sample for Panel B is smaller due to additional data requirements.) *Inside_own* is the percentage of ownership by officers and directors. *Foreign_Own* is a dummy variable that equals 1 if the firm has at least one large foreign owner (ownership greater than 10%). *BD_Size* is the size of the board. *BD_Independence* is the percentage of outside directors on the board. *CEO_Chair* is a dummy variable that equals 1 when the CEO is also the chairman of the firm. *Founder_CEO* is a dummy variable that equals 1 when the CEO is the founder. *CEO_Option* is a dummy variable that equals 1 if the CEO receives option grants in the year.

	Chinese RM firms			Chinese ADR firms			*P*-value for *T*-test and Wilcoxon *Z* test for differences in	
	Mean	Median	Std	Mean	Median	Std	Mean	Median
Inside_own	0.38	0.39	0.25	0.21	0.17	0.22	0.001	0.001
Foreign_Own	0.05	0.00	0.10	0.10	0.00	0.15	0.001	0.001
BD_Size	5.02	5.00	1.94	7.76	7.00	2.51	0.001	0.001
BD_Independence	0.49	0.60	0.27	0.59	0.60	0.16	0.001	0.001
CEO_Chair	0.82	1.00	0.48	0.60	1.00	0.49	0.001	0.001
Founder_CEO	0.47	0.00	0.57	0.51	1.00	0.50	0.128	0.048
CEO_Option	0.36	0.00	0.48	0.79	1.00	0.41	0.001	0.001

TABLE 6 (cont'd)

Panel B: Corporate Governance and the Listing Choices of Chinese Firms

This table reports the logit regression of the indicator variable for Chinese RM firms (versus Chinese ADR firms) on corporate governance characteristics and firm fundamentals. The dependent variable, *CRM*, equals 1 for Chinese RM firms and 0 for Chinese ADR firms. Please see Panel A of Table 6 for the definitions of corporate governance variables and Appendix B for the definitions of firm characteristics. The table reports the coefficient estimates, the corresponding *Z* statistics based on the Wald chi-square adjusted for firm- and year-level clustering (in brackets), the number of observations, and the pseudo R^2. All of the variables are Winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Inside_own	2.328***	1.570***
	(7.15)	(3.21)
Foreign_Own	-3.065***	-2.691***
	(-5.31)	(-2.95)
BD_Size	-0.553***	-0.264***
	(-13.11)	(-3.61)
BD_Independence	0.694	2.971***
	(1.50)	(3.32)
CEO_Chair	0.986***	1.220***
	(6.00)	(4.54)
Founder_CEO	-1.186***	-1.208***
	(-7.61)	(-5.05)
CEO_Option	-1.733***	-1.453***
	(-10.53)	(-5.82)
M/B		-0.026
		(-0.96)
Growth		0.058
		(0.57)
ROE		0.937**
		(2.32)
Size		-1.157***
		(-9.53)
LEV		4.536***
		(5.48)
Capital_Need		0.132
		(0.90)
Op_Cycle		-0.133
		(-0.72)
Inventory		3.567***
		(2.88)
Loss		-0.734
		(-1.20)
Constant	3.684***	5.191***
	(8.18)	(5.15)
N	1,431	1,002
Pseudo R^2	37.2%	56.1%

TABLE 7
Corporate Governance and Financial Reporting Quality of U.S.-listed Chinese Firms

Panel A: Analysis of Accounting Restatements

This table reports the logit regression of the probability of accounting restatements. Column (1) reports the logit regression results based on the sample of U.S.-listed Chinese firms with required data on corporate governance, financial reporting quality, and control variables:

$$Prob(Restatement_{it}) = \alpha + \beta CRM_{it} + \gamma Controls_{it-1} + \varphi Year\ dummies + \theta Industry\ Dummies + \varepsilon_{it}$$

Column (2) reports the results when replacing *CRM* with the fitted value (*CRM_P*) and the corresponding residual value (*CRM_R*) as estimated from the Chinese RM and Chinese ADR selection model, as reported in Column (2) of Table 6, Panel B:

$$Prob(Restatement_{it}) = \alpha + \beta_1 CRM\_P_{it} + \beta_2 CRM\_R_{it} + \gamma Controls_{it-1} + \varphi Year\ dummies + \theta Industry\ Dummies + \varepsilon_{it}$$

The dependent variable, $Restatement_{it}$, is a dummy variable that equals 1 if the financial statement of firm *i* in year *t* is restated later, and 0 otherwise. The table reports the coefficient estimates, the corresponding *Z* statistics based on the Wald chi-square adjusted for firm- and year-level clustering (in brackets), the number of observations, and the pseudo R^2. All of the variables are Winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Please see Appendix B for variable definitions.

	(1)	(2)
CRM	**1.924*** **	
	(5.01)	
CRM_P		**1.493*** **
		(2.71)
CRM_R		0.646***
		(4.65)
M/B	-0.077	-0.076
	(-1.51)	(-1.55)
Growth	0.084	0.091
	(0.96)	(1.05)
LEV	0.168	0.265
	(0.21)	(0.33)
ROE	0.144	0.162
	(0.41)	(0.46)
Size	-0.096	-0.125
	(-1.01)	(-1.23)
Capital_Need	0.312**	0.288**
	(2.35)	(2.17)
Loss	0.890	0.813
	(1.50)	(1.40)
Op_Cycle	0.038	0.034
	(0.28)	(0.25)
Inventory	-0.962	-0.805
	(-0.69)	(-0.58)
Year effects	Yes	Yes
Industry effects	Yes	Yes
N	1,002	1,002
Adjusted R^2	20.3%	19.4%

TABLE 7 (Cont'd)

Panel B: Analysis of Accrual-based Financial Reporting Quality Measures

Column (1) reports the regression results based on the sample of U.S.-listed Chinese firms with the required data on corporate governance, financial reporting quality, and control variables:

$$FRQ_{it} = \alpha + \beta_1 CRM + \beta_3 Contorls_{it} + \varepsilon_{it}$$

Column (2) reports results from regressing the financial reporting quality measures on the fitted value (*CRM_P*) and the corresponding residual value (*CRM_R*) as estimated from the Chinese RM and Chinese ADR selection model, as reported in Column (2) of Table 6, Panel B:

$$FRQ_{it} = \alpha + \beta_1 CRM\_P_{it} + \beta_2 CRM\_R_{it} + \beta_3 Contorls_{it} + \varepsilon_{it}$$

The table reports the coefficient estimates, *t*-statistics adjusted for firm- and year-level clustering (in brackets), the number of observations, and the adjusted R^2. All of the variables are Winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed *t*-tests). Please see Appendix B for the definitions of other variables.

	(1)	(2)
CRM	**0.197****	
	(2.25)	
CRM_P		**0.270***
		(1.84)
CRM_R		0.078**
		(2.41)
M/B	0.004	0.005
	(1.22)	(1.57)
Growth	0.449***	0.422***
	(11.83)	(10.62)
LEV	0.370*	0.287
	(1.87)	(1.34)
ROE	0.006	0.036
	(0.08)	(0.42)
Size	-0.083***	-0.072***
	(-3.93)	(-3.07)
Capital_Need	0.000	-0.004
	(0.01)	(-0.11)
Loss	-0.357*	-0.311
	(-1.93)	(-1.63)
Op_Cycle	0.139***	0.132***
	(2.82)	(2.81)
Inventory	0.940***	1.005***
	(2.61)	(2.78)
Year effects	Yes	Yes
Industry effects	Yes	Yes
N	948	948
Adjusted R^2	44.0%	42.6%

TABLE 8
Analysis of the Earnings Response Coefficient

This table reports results from the regressions of unexpected return (*UR*) over unexpected earnings at the quarterly level (Model (1)) and at the annual level (Model (2)). In Model (1), the dependent variable, UR_{iq}, is the cumulative abnormal returns in the three-day window around the earnings announcement date for firm *i* in quarter q, where the abnormal return is defined as the firm's return less the CRSP value-weighted market return. UE_{iq} is firm *i*'s unexpected quarterly earnings in quarter q, which is measured as the seasonal change in earnings scaled by stock price at the end of the fiscal quarter q. In Model (2), the dependent variable, UR_{it}, is the cumulative abnormal returns one day after year *t-1*'s earnings announcement until one day after year *t*'s earnings announcement, where the abnormal return is defined as the firm's return less the CRSP value-weighted market return. UE_{it} (E_{it}) is firm *i*'s change in (level of) earnings in year *t,* scaled by stock price one day after earnings announcement for fiscal year *t-1*. Control variables include *M/B*, *Size* and *Loss*. Please see Appendix B for the definition of control variables, except that the control variables are measured at the quarterly level for Model (1). The table reports the coefficient estimates, the corresponding *t*-statistics based on standard errors adjusted for firm- and quarter- or year-level clustering, the number of observations, and adjusted R^2. All of the variables are Winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed *t*-test).

	Quarterly regression Model (1)	Annual regression Model (2)
RM	0.021	-0.060
	(1.60)	(-0.93)
China	-0.004	0.177***
	(-0.76)	(2.69)
RM × *China*	-0.022*	0.176
	(-1.93)	(1.38)
UE	0.127***	0.176***
	(6.19)	(4.21)
UE × *RM*	-0.013	-0.025
	(-1.10)	(-0.94)
UE × *China*	0.026	0.103
	(0.84)	(0.97)
UE × *RM* × *China*	-0.028	-0.390***
	(-0.99)	(-3.40)
E		0.246***
		(2.77)
E × *RM*		0.123
		(1.41)
E × *China*		-0.096***
		(-4.40)
E × *RM* × *China*		0.029
		(0.20)
Control variables	Yes	Yes
Control variables × *UE*	Yes	Yes
Control variables × *E*		Yes
Year or quarter fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
N	3,197	991
Adjusted R^2	3.9%	12.6%